



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/886,659	06/21/2001	David A. Brown	08-537-US4	4746
20306 7590 01/06/2009 MCDONNELL BOEHNNEN HULBERT & BERGHOFF LLP 300 S. WACKER DRIVE 32ND FLOOR CHICAGO, IL 60606				
EXAMINER				
SHINGLES, KRISTIE D				
ART UNIT		PAPER NUMBER		
2441				
MAIL DATE		DELIVERY MODE		
01/06/2009		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

09/886,659

Applicant(s)

BROWN, DAVID A.

Examiner

KRISTIE D. SHINGLES

Art Unit

2441

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 October 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 26-49 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 26-49 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
- Paper No./Mail Date: _____

- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date: _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Per Applicant's Request for Continued Examination

Claims 1-25 have been cancelled.
Claims 26-49 have been newly added.

Claims 26-49 are pending.

Continued Examination Under 37 CFR 1.114

I. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/16/2008 has been entered.

Response to Arguments

II. Applicant's arguments with respect to claims 1-25 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 101 Utility

III. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

IV. Claims 26 and 44 are rejected under 35 U.S.C. 101 because the claimed inventions are directed to non-statutory subject matter.

The method recited in claims 26 and 44 do not recite any hardware elements that performs the claimed steps of the method and therefore render the claims non-statutory. Correction is required.

Claim Rejections - 35 USC § 112, second paragraph

V. Claim 27 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 27 recites the limitation "substantially in parallel" in line 4. "Substantially" is a relative term that fails to establish the metes and bounds of the claimed limitation, and the specification does not provide a standard for ascertaining the requisite degree; therefore rendering the claim indefinite. Correction is required.

Claim Rejections - 35 USC § 102

VI. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

VII. Claims 26-28, 30-34, 36-40 and 42-49 are rejected under 35 U.S.C. 102(e) as being anticipated by *Hunter et al* (US 6,877,005).

a. **Per claim 26,** *Hunter et al* teach a method comprising:

- searching data for a first initial search result using at least a first portion of a first key (*col.6 line 60-col.7 line 2*); and
- when the first initial search result is a route index corresponding to the first key, then returning the route index (*col.7 lines 3-10, col.10 lines 8-52—corresponding route index for each search key*); and
- when the first initial search result is a subtree index for an iterative search, then performing an iterative search comprising: searching the data for an iterative search result using a subsequent key comprising the subtree index found in a preceding search and at least a next portion of the first key (*col.7 line 56-col.8 line 24, col.10 lines 60-67—search iterations using search key with a route and hash index*); and
- when the iterative search result is a route index corresponding to the first key, then returning the route index; and when the iterative search result is a subtree index for a next search, then performing the iterative search again (*col.8 lines 4-11 and 42-65, col.10 lines 8-37 —hash index generated for each new search and iteration*).

b. **Claims 32, 38 and 44** contain limitations that are substantially equivalent to claim 26 and are therefore rejected under the same basis.

c. **Per claim 27,** *Hunter et al* teach the method of claim 26 further comprising: searching the data for a second initial search result using at least a first portion of a second key, wherein the step of searching the data for the second initial search result is performed substantially in parallel with the step of searching the data for the iterative search result (*col.10 lines 8-52*).

d. **Per claim 28,** *Hunter et al* teach the method of claim 27 wherein the first and/or second keys comprise at least one of either a 32 bit IPv4 address or a 128 bit IPv6 address (*col.4 lines 31-37*).

e. **Claims 34, 40 and 46** are substantially equivalent to claim 28 and are therefore rejected under the same basis.

f. **Per claim 30**, *Hunter et al* teach the method of claim 26 wherein the data is stored in a lookup table (*col.3 line 67-col.4 line 6, col.7 lines 37-54*).

g. **Claims 36, 42 and 48** are substantially equivalent to claim 30 and are therefore rejected under the same basis.

h. **Per claim 31**, *Hunter et al* teach the method of claim 30 wherein the subtree index comprises a pointer to at least one other entry stored in the lookup table (*col.3 line 67-col.4 line 6, col.7 lines 37-54, col.9 lines 30-33*).

i. **Claims 37, 43 and 49** are substantially equivalent to claim 31 and are therefore rejected under the same basis.

j. **Per claim 33**, *Hunter et al* teach the apparatus of claim 32 further comprising: a controller configured to enable parallel processing of at least (i) searching the data for a second initial search result using at least a first portion of a second key, and (ii) searching the data for an iterative search result based on a subsequent key comprising the subtree index found in a preceding search and at least a next portion of the first key (*col.8 lines 4-11 and 42-65, col.10 lines 8-52*).

k. **Claims 38 and 45** are substantially equivalent to claim 33 and are therefore rejected under the same basis.

Claim Rejections - 35 USC § 103

VIII. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

IX. **Claims 29, 35 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hunter et al (US 6,877,005) in view of Holender (US 5,727,051).**

a. **Per claims 29, Hunter et al** teach the method of claim 27, yet fail to explicitly teach wherein the first and/or second keys further comprise a prefix corresponding to a Virtual Private Network identifier. However, *Holender* teaches using the virtual network identifiers when performing iterative searches for routing information (col.6 lines 59-64, col.14 lines 5-9). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of *Hunter et al* and *Holender* for the purpose of extending the searching capabilities to virtual network and address located on a VPN.

b. **Claims 35 and 41** are substantially equivalent to claim 29 and are therefore rejected under the same basis.

Conclusion

X. The prior art made of record and not relied upon is considered pertinent to Applicant's disclosure: Frank (6754799), Masten et al (3716840), Tzeng (6067574), Ahuja et al (5946679), Brown (6836771).

Examiner's Note: Examiner has cited particular columns and line numbers in the reference(s) applied to the claims above for the convenience of the applicant. Although the specified citations

are representative of the teachings of the art and are applied to specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the Applicant in preparing responses, to fully consider the references in entirety as potentially teaching all or part of the claimed invention, as well as the context of the cited passages as taught by the prior art or relied upon by the examiner. Should Applicant amend the claims of the claimed invention, it is respectfully requested that Applicant clearly indicate the portion(s) of Applicant's specification that support the amended claim language for ascertaining the metes and bounds of Applicant's claimed invention.

XI. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kristie Shingles whose telephone number is 571-272-3888. The examiner can normally be reached on Monday-Friday 8:30-6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rupal Dharia can be reached on 571-272-3880. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Kristie Shingles
Examiner
Art Unit 2441

/KDS/

/William C. Vaughn, Jr./

Supervisory Patent Examiner, Art Unit 2444/William C. Vaughn, Jr./

Supervisory Patent Examiner, Art Unit 2444

Application/Control Number: 09/886,659
Art Unit: 2441

Page 8